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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/871,240

05/30/2001

Mark C. Duhon

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10/24/2006

SCHLUMBERGER RESERVOIR COMPLETIONS
14910 AIRLINE ROAD
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EXAMINER

GAY, JENNIFER HAWKINS

ART UNIT

PAPER NUMBER

3672

DATE MAILED: 10/24/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/871,240

Applicant(s)

DUHON ET AL.

Examiner

Jennifer H. Gay

Art Unit

3672

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 September 2006.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2,3,5-11 and 24-49 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 34 is/are allowed.
- 6) ☒ Claim(s) 2,3,5-31,33,35-38 and 40-49 is/are rejected.
- 7) ☒ Claim(s) 32 and 39 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Response to Appeal Brief

1. Applicant's arguments filed September 29th, 2006, with respect to the rejection(s) of claim(s) 2, 3, 5-11 and 27-49 under 35 USC 102 and 103 have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Maehara et al. (US 4,812,177) and Hayden, Jr. et al. (US 3,689,3235).

Applicant has argued that the specification of the instant application does not in fact teach that aluminum by itself is a superplastic material but rather teaches that aluminum must undergo a certain process to become superplastic and thus there is no basis for any of the rejections given in the previous Office Action. A further study of the instant application and the process of making a material superplastic has resulted in the examiner agreeing with applicant's argument. Therefore the previous rejections have been withdrawn. However, the references to Maehara et al. and Hayden, Jr. et al. that teach the use of superplastic materials in wellbore environments have been discovered.

Claim Objections

2. Claim 41 is objected to because of the following informalities: "an inner well" should be changed to --an inner wall--. Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 28 and 29 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 28 and 29 are considered to be indefinite because it is unclear if the apparatus of claim 2 further includes a packer or a patch or is a packer or a patch. The claims are currently written as though the apparatus includes a packer or a patch and thus the claims will be treated as such. Clarification and correction are required.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claim 11 is rejected under 35 U.S.C. 102(b) as being anticipated by Maehara et al. (US 4,812,177).

Maehara et al. discloses a superplastic element used in a wellbore and a heating device/process for heating the element to a temperature sufficient to cause the element to exhibit superplastic behavior (1:64-2:5).

7. Claim 40 is rejected under 35 U.S.C. 102(b) as being anticipated by Hayden, Jr. et al. (US 3,689,325).

Hayden, Jr. et al. discloses a fishing tool for use in a wellbore where the fishing tool includes a superplastic element (21:32-41).

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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9. Claims 2, 27, 28, 30, 31, 33, and 44-46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Arizmendi (US 5,941,313) in view of Maehara et al.

Regarding claim 2: Arizmendi discloses a downhole seal **26** that is engagable with a stainless steel element **22** (4:30-33).

Arizmendi discloses all of the limitations of the above claim(s) except for the element being a superplastic material.

Maehara et al. discloses a steel material that is a superplastic material. Maehara et al. further teaches using the material in a wellbore environment (1:64-2:5).

It would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, to have modified the apparatus of Arizmendi such that the steel of the element was a superplastic steel as taught by Maehara et al. in order to have improved the corrosion resistance, strength, fatigue resistance, and toughness of the apparatus (1:64-2:5). One would have been motivated to make this combination in order to have increased the life span of downhole equipment and thus reducing the cost of replacement parts and the operation to replace the failed equipment.

Regarding claim 27: The compression of the element of Arizmendi aids in the compression of the seal.

Regarding claim 28: The seal of Arizmendi is a packer.

Regarding claim 30: Maehara et al. discloses a superplastic element used in a wellbore and a heating device/process for heating the element to a temperature sufficient to cause the element to exhibit superplastic behavior (1:64-2:5).

Regarding claim 31: The seal further includes a piston **28** adapted to cause the translation of the element.

Regarding claim 33: The element and seal of Arizmendi are compressed to plug or block fluid through the casing **14**.

Regarding claims 44-46: Though Maehara et al. does not teach that the disclosed superplastic material had the specific properties listed in the above claims, the indicated properties are common properties of some superplastic materials. As Maehara et al. teaches that it is well known to use superplastic materials in wellbore equipment, it would have been considered obvious to one of ordinary skill in the art, at the time the invention

was made, to have used what ever superplastic material meet the specific requirements of the tool or operation within which it was to be used. Further, it would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, to have used a superplastic material that had the indicated properties, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416.

10. Claims 2, 3, 27, 28, 30, 31, 33, 35, 36, and 44-49 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sullaway (US 4,151,875) in view of Maehara et al.

Regarding claim 2: Sullaway discloses a downhole seal **96** that is engagable with a steel element **11** (7:35-46).

Sullaway discloses all of the limitations of the above claim(s) except for the element being a superplastic material.

Maehara et al. discloses a steel material that is a superplastic material. Maehara et al. further teaches using the material in a wellbore environment (1:64-2:5).

It would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, to have modified the apparatus of Arizmendi such that the steel of the element was a superplastic steel as taught by Maehara et al. in order to have improved the corrosion resistance, strength, fatigue resistance, and toughness of the apparatus (1:64-2:5). One would have been motivated to make this combination in order to have increased the life span of downhole equipment and thus reducing the cost of replacement parts and the operation to replace the failed equipment.

Regarding claim 3: Sullaway further discloses an anchor **17**, **17'** actuatable by the element.

Regarding claim 27: The movement of the element of Sullaway aids in the compression of the seal.

Regarding claim 28: The seal of Sullaway is a packer.

Regarding claim 30: Maehara et al. discloses a superplastic element used in a wellbore and a heating device/process for heating the element to a temperature sufficient to cause the element to exhibit superplastic behavior (1:64-2:5).

Regarding claim 31: The seal further includes a piston 16 adapted to cause the translation of the element.

Regarding claim 33: The element and seal of Sullaway are compressed to plug or block fluid through the casing.

Regarding claim 35: The apparatus of Sullaway includes a packer and an anchor.

Regarding claim 36: The packer includes the element which is a sleeve attached to the anchor and the seal where the movement of the sleeve sets the anchor and the packer.

Regarding claims 44-49: Though Maehara et al. does not teach that the disclosed superplastic material had the specific properties listed in the above claims, the indicated properties are common properties of some superplastic materials. As Maehara et al. teaches that it is well known to use superplastic materials in wellbore equipment, it would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, to have used what ever superplastic material meet the specific requirements of the tool or operation within which it was to be used. Further, it would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, to have used a superplastic material that had the indicated properties, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416.

11. Claims 5 and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Montaron (US 6,250,385) in view of Maehara et al.

Regarding claim 5: Montaron discloses a downhole steel element (3:19-22) that includes a sand screen (Figure 8).

Montaron discloses all of the limitations of the above claim(s) except for the steel element being a superplastic steel.

Maehara et al. discloses a steel material that is a superplastic material. Maehara et al. further teaches using the material in a wellbore environment (1:64-2:5).

It would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, to have modified the apparatus of Arizmendi such that the steel of the element was a superplastic steel as taught by Maehara et al. in order to have improved the corrosion resistance, strength, fatigue resistance, and toughness of the apparatus (1:64-2:5). One would have been motivated to make this combination in order to have increased the life span of downhole equipment and thus reducing the cost of replacement parts and the operation to replace the failed equipment.

Regarding claim 38: Maehara et al. discloses a superplastic element used in a wellbore and a heating device/process for heating the element to a temperature sufficient to cause the element to exhibit superplastic behavior (1:64-2:5).

12. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Miszewski et al. (US 5,131,470) in view of Hayden, Jr. et al.

Miszewski et al. discloses a downhole shock absorber that includes a steel element (6:8, 9).

Miszewski et al. discloses all of the limitations of the above claim(s) except for the element being a superplastic material.

Hayden, Jr. et al. discloses a steel material that is a superplastic material. Hayden, Jr. et al. further teaches using the material in a wellbore environment (21:32-41).

It would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, to have modified the apparatus of Miszewski et al. such that the steel of the element was a superplastic steel as taught by Hayden, Jr. et al. in order to have improved the corrosion resistance, strength, fatigue resistance, and toughness of the apparatus (21:20-41). One would have been motivated to make this combination in order to have increased the life span of downhole equipment and thus reducing the cost of replacement parts and the operation to replace the failed equipment.

13. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Thompson et al. (US 6,454,001) in view of Hayden, Jr. et al.

Thompson et al. discloses a downhole steel releasable connector mechanism (6:4-7).

Thompson et al. discloses all of the limitations of the above claim(s) except for the element being a superplastic material.

Hayden, Jr. et al. discloses a steel material that is a superplastic material. Hayden, Jr. et al. further teaches using the material in a wellbore environment (21:32-41).

It would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, to have modified the apparatus of Thompson et al. such that the steel of the element was a superplastic steel as taught by Hayden, Jr. et al. in order to have improved the corrosion resistance, strength, fatigue resistance, and toughness of the apparatus (21:20-41). One would have been motivated to make this combination in order to have increased the life span of downhole equipment and thus reducing the cost of replacement parts and the operation to replace the failed equipment.

14. Claims 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bosse-Platiere (US 4,191,265) in view of Hayden, Jr. et al.

Bosse-Platiere discloses a downhole shaped charge that includes a steel element (4:32-37).

Bosse-Platiere discloses all of the limitations of the above claim(s) except for the element being a superplastic material.

Hayden, Jr. et al. discloses a steel material that is a superplastic material. Hayden, Jr. et al. further teaches using the material in a wellbore environment (21:32-41).

It would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, to have modified the apparatus of Bosse-Platiere such that the steel of the element was a superplastic steel as taught by Hayden, Jr. et al. in order to have improved the corrosion resistance, strength, fatigue resistance, and toughness of the apparatus (21:20-41). One would have been motivated to make this combination in order

to have increased the life span of downhole equipment and thus reducing the cost of replacement parts and the operation to replace the failed equipment.

15. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mohaupt (US 4,081,031) in view of Hayden, Jr. et al.

Mohaupt discloses a downhole weak point connector that includes a steel element (7:46-48, 8:61-65; the examiner notes that column 7 teaches that the housing **24** can be made from steel and that the housing is considered to be a portion of the weak point connector).

Mohaupt discloses all of the limitations of the above claim(s) except for the element being a superplastic material.

Hayden, Jr. et al. discloses a steel material that is a superplastic material. Hayden, Jr. et al. further teaches using the material in a wellbore environment (21:32-41).

It would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, to have modified the apparatus of Mohaupt such that the steel of the element was a superplastic steel as taught by Hayden, Jr. et al. in order to have improved the corrosion resistance, strength, fatigue resistance, and toughness of the apparatus (21:20-41). One would have been motivated to make this combination in order to have increased the life span of downhole equipment and thus reducing the cost of replacement parts and the operation to replace the failed equipment.

16. Claim 29 is rejected under 35 U.S.C. 103(a) as being unpatentable over Arizmendi in view of Maehara et al. as applied to claims 2 and 27 above, and further in view of Montaron.

Arizmendi and Maehara et al. discloses all of the limitations of the above claim(s) except for the apparatus including a patch.

Montaron discloses a wellbore tool that is a steel casing patch (2:60-65, 3:19-22).

It would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, to have modified the apparatus of Arizmendi in view of Maehara et al. to include a patch as taught by Montaron in order to have included a means for sealing trouble zones of a wellbore or damaged casing.

17. Claim 29 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sullaway in view of Maehara et al. as applied to claims 2 and 27 above, and further in view of Montaron.

Sullaway and Maehara et al. discloses all of the limitations of the above claim(s) except for the apparatus including a patch.

Montaron discloses a wellbore tool that is a steel casing patch (2:60-65, 3:19-22).

It would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, to have modified the apparatus of Sullaway in view of Maehara et al. to include a patch as taught by Montaron in order to have included a means for sealing trouble zones of a wellbore or damaged casing.

18. Claims 37, 42, and 43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nobileau (US 5,979,560) in view of Maehara et al.

Nobileau discloses a downhole steel tubular or junction seal assembly (2:1-3).

Nobileau discloses all of the limitations of the above claim(s) except for the steel element being a superplastic steel and a heating device for heating the element to a temperature at which the element exhibits superplastic behavior.

Maehara et al. discloses a steel material that is a superplastic material. Maehara et al. further teaches using the material in a wellbore environment (1:64-2:5). Maehara et al. further discloses a superplastic element used in a wellbore and a heating device/process for heating the element to a temperature sufficient to cause the element to exhibit superplastic behavior (1:64-2:5).

It would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, to have modified the apparatus of Nobileau such that the steel of the element was a superplastic steel as taught by Maehara et al. in order to have improved the corrosion resistance, strength, fatigue resistance, and toughness of the apparatus (1:64-2:5). One would have been motivated to make this combination in order to have increased the life span of downhole equipment and thus reducing the cost of replacement parts and the operation to replace the failed equipment.

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19. Claims 40 and 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Little (US 1,917,135) in view of Hayden, Jr. et al.

Little discloses a downhole fishing tool that includes a steel element **45** (2:10-16) that is adapted to expand to engage an inner wall of wellbore casing.

Little discloses all of the limitations of the above claim(s) except for the element being a superplastic material.

Hayden, Jr. et al. discloses a steel material that is a superplastic material. Hayden, Jr. et al. further teaches using the material in a wellbore environment (21:32-41).

It would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, to have modified the apparatus of Little such that the steel of the element was a superplastic steel as taught by Hayden, Jr. et al. in order to have improved the corrosion resistance, strength, fatigue resistance, and toughness of the apparatus (21:20-41). One would have been motivated to make this combination in order to have increased the life span of downhole equipment and thus reducing the cost of replacement parts and the operation to replace the failed equipment.

Allowable Subject Matter

20. Claim 34 is allowed.

21. Claims 32 and 39 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

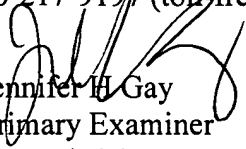
Conclusion


22. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jennifer H. Gay whose telephone number is (571) 272-7029. The examiner can normally be reached Monday through Friday from 8am to 5pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Bagnell can be reached on (571) 272-6999. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Jennifer H. Gay
Primary Examiner
Art Unit 3672

JHG 
October 18, 2006